

ABSTRACT

A semiconductor device having excellent crystallinity and excellent electric characteristics is provided, wherein the semiconductor device includes a ZnO thin film having excellent surface smoothness. ZnO-based thin films (an n-type contact layer 6, an n-type clad layer 7, an active layer 8, a p-type clad layer 9, and a p-type contact layer 10) primarily containing ZnO are formed sequentially by an ECR sputtering method or the like on a zinc-polar surface 1a of a ZnO substrate 1. A transparent electrode 3 and a p-side electrode 4 are formed by an evaporation method or the like on a surface of the p-type contact layer 10, and an n-side electrode 5 is formed on an oxygen-polar surface 1b of the ZnO substrate 1.